



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,974	04/05/2001	Gong Gu	SAR 13995	4112

28166 7590 07/21/2005

MOSER, PATTERSON & SHERIDAN, LLP
/SARNOFF CORPORATION
595 SHREWSBURY AVENUE
SUITE 100
SHREWSBURY, NJ 07702

EXAMINER

TRINH, SONNY

ART UNIT	PAPER NUMBER
----------	--------------

2687

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,974

Applicant(s)

GU ET AL.

Examiner

Sonny TRINH

Art Unit

2687

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 is/are allowed.
- 6) ☐ Claim(s) 12,13,15,17 and 18 is/are rejected.
- 7) ☒ Claim(s) 14 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/05/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Amendment filed 05/17/05. Claims 1-20 are still pending.

Response to Arguments

2. Applicant's arguments with respect to claim 12 has been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

3. The indicated allowability of claims 17-20 is withdrawn in view of the newly discovered reference(s) to Laws ("Laws"; U.S. Patent Number 5,3030,417). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 12-13, 15, 17-18** are rejected under 35 U.S.C. 102(b) as being anticipated by Laws ("Laws"; U.S. Patent Number 5,3030,417).

Regarding **claim 12**, with reference to figures 2, 4, 8 and descriptions, Laws discloses an image-reject mixer (column 1) comprising a first mixer (figure 4, MIX 2I) having a first filter (BB FILTER) and a local oscillator (LO) input; a second mixer (MIX 2Q) having a second filter (BB FILTER) and a LO input; and commutating circuitry for commutating said LO inputs of said first mixer and said second mixer between in-phase and quadrature phases (see phase shift +/-45 degree) also figure 8 and column 8.

Regarding **claim 13**, Laws further discloses that the commutating circuitry generates two complementary 50 % duty cycle clock signals for commutating said LO inputs of said first mixer and said second mixer between in-phase and quadrature phases (see figures 2, 4, 8 and the 45 degree phase shifter).

Regarding **claim 15**, Laws further discloses that the commutating circuitry couples a LO signal that is commutated between in-phase and quadrature phases to said LO inputs of said first mixer and said second mixer (see phase shift +/-45 degree) also figure 8 and column 8.

Regarding **claims 17-18**, these claims merely reflect the method claim as opposed to the apparatus claim of claims 12-13 and are therefore rejected for the same reasons.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2687

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 14, 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Laws ("Laws"; U.S. Patent Number 5,303,417).

Regarding **claim 14**, Laws discloses the invention but does not explicitly disclose that the clock signals are square waves. However, square waves are well known and are widely used in the communication circuitry and the Examiner takes Official notice of such use. The motivation for using square waves is the ease of having 50 percent duty clock signal. The mixers can easily be implemented as integrated circuits and thus can be manufactured inexpensively.

Regarding **claim 19**, this claim merely reflects the method claim as opposed to the apparatus claim of claim 14 and is therefore rejected for the same reasons.

Allowable Subject Matter

6. **Claims 1-11** were allowed by the previous Office action.

Claims 16, 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding **claim 16**, the prior art fails to teach that the image-reject mixer of claim 12 further comprising a commutating mixer for modulating the output of said second filter by the difference between said complementary clock signals.

Claim 20 is objected to for the same reason as given in the objection of claim 16.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonny TRINH whose telephone number is 571-272-7927. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester KINCAID can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


SONNY TRINH
PRIMARY EXAMINER

7/15/05